

Amendment and Response

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Serial No.: 10/691,330

Confirmation No.: 1384

Filed: October 22, 2003

For: USE OF COLOSTRININ, CONSTITUENT PEPTIDES THEREOF, AND ANALOGS THEREOF AS
INHIBITORS OF APOPTOSIS AND OTHER CELLULAR DAMAGE

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. (Currently amended) A method for inhibiting apoptosis in a cell, the method comprising: determining an effective amount of an apoptosis inhibitor effective to inhibit apoptosis in the cell;

wherein an apoptosis inhibitor is selected from the group consisting of colostrinin, a constituent peptide of colostrinin and combinations thereof;

contacting the cell with the effective amount of an apoptosis inhibitor; wherein the constituent peptide of colostrinin is selected from the group consisting of MQPPPPLP (SEQ ID NO:1), LQTPQPLLQVMMEPQGD (SEQ ID NO:2), DQPPDVEKPDQLQPFQVQS (SEQ ID NO:3), LFFFLPVNVNLP (SEQ ID NO:4), DLEMPVLPVEPFPFV (SEQ ID NO:5), MPQNFYKLPQM (SEQ ID NO:6), VLEMKFPPPPQETVT (SEQ ID NO:7), and LKPFPKLKVEVFPP (SEQ ID NO: 8), VVMEV (SEQ ID NO:9), SEQP (SEQ ID NO:10), DKE (SEQ ID NO:11), FPPPK (SEQ ID NO:12), DSQPPV (SEQ ID NO:13), DPPPQSQ (SEQ ID NO:14), SEEMP (SEQ ID NO:15), KYKLOPE (SEQ ID NO:16), VLPPNVG (SEQ ID NO:17), VYPFTGPJPN (SEQ ID NO:18), SLPONILPL (SEQ ID NO:19), TQTPVVVPPF (SEQ ID NO:20), LQPEIMGVPKVKETMVPK (SEQ ID NO:21), HKEMPFPKYPVEPFTESQ (SEQ ID NO:22), SLTLTDVEKLHLPLPLVQ (SEQ ID NO:23), SMWHQPP (SEQ ID NO:24), QPLPPTVMFP (SEQ ID NO:25), PQSVLS (SEQ ID NO:26), LSOPKVLVPVQPKAVPQRDMPIQ (SEQ ID NO:27), AFLLYQE (SEQ ID NO:28), RGPFPILV (SEQ ID NO:29), ATFNRYQDDHGEEILKSL (SEQ ID NO:30), VESYVPLFP (SEQ ID NO:31), FLLYQEPVLGPVR (SEQ ID NO:32), LNF (SEQ ID NO:33), and MHQPPQPLPPTVMFP (SEQ ID NO:34);

and wherein the apoptosis inhibitor inhibits apoptosis in the cell.

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2. (Original) The method of claim 1 wherein the cell is present in a cell culture, a tissue, an organ, or an organism.
3. (Original) The method of claim 1 wherein the cell is a mammalian cell.
4. (Original) The method of claim 3 wherein the cell is a human cell.
5. (Previously Presented) The method of claim 1 wherein the inhibitor is colostrinin.
6. (Currently amended) The method of claim 1 wherein the inhibitor is a constituent peptide of colostrinin selected from the group consisting of MQPPPLP (SEQ ID NO:1), LQTPQPLLQVMMEPQGD (SEQ ID NO:2), DQPPDVEKPDQLQPFQVQS (SEQ ID NO:3), LFFFPLPVNVLP (SEQ ID NO:4), DLEMPVLVPVFPPFV (SEQ ID NO:5), MPQNFYKLPQPM (SEQ ID NO:6), VLEMKFPPPPQETVT (SEQ ID NO:7), LKPFPKLKVEVFPFP (SEQ ID NO:8), VVMEV (SEQ ID NO:9), SEQP (SEQ ID NO:10), DKE (SEQ ID NO:11), FPPP (SEQ ID NO:12), DSQPPV (SEQ ID NO:13), DPPPPQS (SEQ ID NO:14), SEEMP (SEQ ID NO:15), KYKLPQE (SEQ ID NO:16), VLPPNVG (SEQ ID NO:17), VYPFTGPIPN (SEQ ID NO:18), SLPQNLPL (SEQ ID NO:19), TQTPVVVPPF (SEQ ID NO:20), LOPEIMGVPKVKETMVPK (SEQ ID NO:21), HKEMPFPKYPVEPFTEQ (SEQ ID NO:22), SLTLTDVEKLHLPLPLVQ (SEQ ID NO:23), SWMHQPP (SEQ ID NO:24), QPLPPTVMFP (SEQ ID NO:25), PQSVLS (SEQ ID NO:26), LSQPKVLPVPQKAVPQRDMPIQ (SEQ ID NO:27), AFLLYQEQ (SEQ ID NO:28), RGPFPILV (SEQ ID NO:29), ATFNRYQDDHGEEILKSL (SEQ ID NO:30), VESYVPLFP (SEQ ID NO:31), FLLYQEPVLGPVR (SEQ ID NO:32), LNF (SEQ ID NO:33), MHQPPQPLPPTVMFP (SEQ ID NO:34), and combinations thereof.
7. (Canceled)

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8. (Previously Presented) The method of claim 1 wherein the apoptosis is due to DNA damage.

9-11. (Canceled)

12. (Currently amended) A method for protecting against DNA damage in a cell, the method comprising:

determining an effective amount of a compound effective to protect against DNA damage in the cell, wherein the compound is selected from the group consisting of colostrinin, a constituent peptide of colostrinin and combinations thereof;

contacting the cell with an effective amount of the compound;

wherein the constituent peptide of colostrinin is selected from the group consisting of MQPPPLP (SEQ ID NO:1), LQTPQPLLQVMMEPQGD (SEQ ID NO:2), DQPPDVEKPDQLQPQFQVQS (SEQ ID NO:3), LFFFPLPVNVLP (SEQ ID NO:4), DLEMPVLPVPFPFV (SEQ ID NO:5), MPQNFYKLPQM (SEQ ID NO:6), VLEMKFPPPQQETVT (SEQ ID NO:7), and LKPFPKLKVEVFPFP (SEQ ID NO: 8), VVMEV (SEQ ID NO:9), SEQP (SEQ ID NO:10), DKE (SEQ ID NO:11), FPPPK (SEQ ID NO:12), DSQPPV (SEQ ID NO:13), DPPPPQSQ (SEQ ID NO:14), SEEMP (SEQ ID NO:15), KYKLOPE (SEQ ID NO:16), VLPPNVG (SEQ ID NO:17), VYPFTGPIPN (SEQ ID NO:18), SLPQNLPL (SEQ ID NO:19), TQTPVVVPPF (SEQ ID NO:20), LQPEIMGVPKVKETMVPK (SEQ ID NO:21), HKEMPFPKYPVPFPTESQ (SEQ ID NO:22), SLTLTDVEKLHLPLPLVQ (SEQ ID NO:23), SWMHQPP (SEQ ID NO:24), QPLPPTVMFP (SEQ ID NO:25), PQSVLS (SEQ ID NO:26), LSQPKVLPVPQKAVPQRDMPIQ (SEQ ID NO:27), AFLLYQE (SEQ ID NO:28), RGPFPILV (SEQ ID NO:29), ATFNRYQDDHGEEILKSL (SEQ ID NO:30), VESYVPLFP (SEQ ID NO:31), FLLYQEPVLGPVR (SEQ ID NO:32), LNF (SEQ ID NO:33), and MHQPPQPLPTVMFP (SEQ ID NO:34);

and wherein the compound protects the cell against DNA damage.

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13. (Original) The method of claim 12 wherein the cell is present in a cell culture, a tissue, an organ, or an organism.

14. (Original) The method of claim 12 wherein the cell is a mammalian cell.

15. (Original) The method of claim 14 wherein the cell is a human cell.

16-26. (Canceled)

27. (Currently amended) A method for reducing the toxic effect of β -amyloid induced apoptosis in [[on]] a cell, the method comprising;

determining an effective amount of a compound effective to reduce the toxic effect of β -amyloid induced apoptosis in [[on]] the cell, wherein the compound is selected from the group consisting of colostrinin, a constituent peptide of colostrinin and combinations thereof;

contacting the cell with an effective amount of the compound;

wherein the constituent peptide of colostrinin is selected from the group consisting of SEQ ID NO:1-8 MQPPPLP (SEQ ID NO:1), LQTPQPLLQVMMEPOGD (SEQ ID NO:2), DOPPPDVEKPDQLQPFOVQS (SEQ ID NO:3), LFFFPLPVNVLP (SEQ ID NO:4), DLEMPVLVPFEPFPV (SEQ ID NO:5), MPQNFYKLQPQM (SEQ ID NO:6), VLEMKFPPPPQETVT (SEQ ID NO:7), and LKPFPKLKVEVFPPF (SEQ ID NO: 8), VVMEV (SEQ ID NO:9), SEQP (SEQ ID NO:10), DKE (SEQ ID NO:11), FPPP (SEQ ID NO:12), DSQPPV (SEQ ID NO:13), DPPPQPS (SEQ ID NO:14), SEEMP (SEQ ID NO:15), KYKLOPE (SEQ ID NO:16), VLPPNVG (SEQ ID NO:17), VYPFTGPPIP (SEQ ID NO:18), SLPQNLPL (SEQ ID NO:19), TQTPVVVPPF (SEQ ID NO:20), LQPEIMGVPKVKETMVPK (SEQ ID NO:21), HKEMPFPKYPVEPFTESQ (SEQ ID NO:22), SLTLDVFKLHLPLPLVQ (SEQ ID NO:23), SWMHQPP (SEQ ID NO:24), QPLPPTVMFP (SEQ ID NO:25), PQSVLS (SEQ ID NO:26), LSOPKVLVPVPQKAVPQRDMPIQ (SEQ ID NO:27), AFLLYQE (SEQ ID NO:28),

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RGPFPILV (SEQ ID NO:29), ATFNRYQDDHGEEILKSL (SEQ ID NO:30), VESYVPLFP (SEQ ID NO:31), FLLYQEPVLGPVR (SEQ ID NO:32), LNF (SEQ ID NO:33), and MHQQPQPLPPTVMFP (SEQ ID NO:34); and

wherein the compound reduces the toxic effect of β -amyloid induced apoptosis in [[on]] the cell.

28. (Currently amended) A method for reducing the toxic effect of retinoic acid induced apoptosis in [[on]] a cell, the method comprising;

determining an effective amount of a compound effective to reduce the toxic effect of retinoic acid induced apoptosis in [[on]] the cell, wherein the compound is selected from the group consisting of colostrinin, a constituent peptide of colostrinin and combinations thereof;

contacting the cell with an effective amount of the compound;

wherein the constituent peptide of colostrinin is selected from the group consisting of SEQ ID NO:1-8 MQPPLP (SEQ ID NO:1), LQTPQPLLOVMMMEPOGD (SEQ ID NO:2), DQPPDVEKPDLQFQVQS (SEQ ID NO:3), LFFFPLVVNVLP (SEQ ID NO:4), DLEMPVLPVEPFPV (SEQ ID NO:5), MPQNFYKLPQM (SEQ ID NO:6), VLEMKFPPPPQETVT (SEQ ID NO:7), LKPFPKLKVEVFPFP (SEQ ID NO: 8), VVMEV (SEQ ID NO:9), SEQP (SEQ ID NO:10), DKE (SEQ ID NO:11), FPPPK (SEQ ID NO:12), DSQPPV (SEQ ID NO:13), DPPPQPS (SEQ ID NO:14), SEEMP (SEQ ID NO:15), KYKLOPE (SEQ ID NO:16), VLPPNVG (SEQ ID NO:17), VYPFTGIPN (SEQ ID NO:18), SLPQNILPL (SEQ ID NO:19), TQTPVVVPPF (SEQ ID NO:20), LQPEIMGVPKVKETMVPK (SEQ ID NO:21), HKEMPFPKYPVEPFTESQ (SEQ ID NO:22), SLTLDVEKLHLPLPLVQ (SEQ ID NO:23), SWMHQPP (SEQ ID NO:24), QPLPPTVMFP (SEQ ID NO:25), PQSVLS (SEQ ID NO:26), LSQPKVLPVPQKAVPQRDMPIQ (SEQ ID NO:27), AFLLYQE (SEQ ID NO:28), RGPFPILV (SEQ ID NO:29), ATFNRYQDDHGEEILKSL (SEQ ID NO:30), VESYVPLFP (SEQ ID NO:31), FLLYQEPVLGPVR (SEQ ID NO:32), LNF (SEQ ID NO:33), and MHQQPQPLPPTVMFP (SEQ ID NO:34); and

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wherein the compound reduces the toxic effect of retinoic acid induced apoptosis in
[[on]] the cell.

29-32. (Cancel)

33. (Previously Presented) The method of claim 27 wherein the cell is present in a cell culture, a tissue, an organ, or an organism.

34. (Previously Presented) The method of claim 27 wherein the cell is a mammalian cell.

35. (Previously Presented) The method of claim 34 wherein the cell is a human cell.

36. (Previously Presented) The method of claim 28 wherein the cell is present in a cell culture, a tissue, an organ, or an organism.

37. (Previously Presented) The method of claim 28 wherein the cell is a mammalian cell.

38. (Previously Presented) The method of claim 37 wherein the cell is a human cell.